

# Canadian Computer Wholesaler



## The Universal Eye: Photos or Video?

Boundaries Shift  
for Digital Cameras

Software Review:  
Dynamic Document Management

Hot Sellers in 'Edutainment'

Comdex/Fall:  
The Vegas Report

Lab Test:  
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## CONTACT THE EDITOR

### LETTERS

Canadian Computer Publications welcomes your opinions on current issues in the market, plus your feedback on our publications.

### NEWS

We welcome your ideas regarding news and features reports for Canadian Computer Publications. Feel free to contact the editors directly with your suggestions.

### TEST LABS

We'd like to hear your feedback and suggestions on our Test Labs reviews section.

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**S**o I've now played checkers over the Internet.

I was feeling quite smug about my prowess until I found my partner from Baff's case was just seven years old! Then I was absolutely crushed by a 61-year-old player from Florida.

Oh well. Checkers was admittedly something of a tangent I'd been contemplating the absolute paranoiacism of Microsoft Corp. and the next thing I knew, I'd picked up a virtual checker from that Internet Gaming Zone (<http://www.igzone.com>); there are links to all

kinds of services: e-mail, travel, an on-line encyclopedia and chat groups. The amazing fact is there are very few barriers, opportunities that someone at Microsoft isn't at least investigating.

Consider the new Microsoft Windows Phone System (3289). You can leave an "answering machine" message for certain colleagues, friends or family members who call, plus designate who's important enough to make the phone ring. (Otherwise calls can go to voice-mail.) A speaker on the handset audibly announces who's calling. You can give voice commands, like "delete message," "return call" or "tell Mom." A significant drawback: your PC has to stay turned on all the time.

Or take a look at the WebTV Plus System that hit Canada last past summer. For \$299 for the receiver, \$59 for a wireless keyboard, plus about \$14.99 monthly for the service, the TV generation can nodd with the "Net crowd." The system offers sophisticated TV-tuning searching capability (it works in a time, by subject matter or actor's name, for example, "one click" VCR recording, and picture-in-picture capability to let users watch TV in a box, while searching the Web, for example).

Could you have a better computing experience on your PC? Of course! But this technology could make rounds into the still-substantial market segment that doesn't own home computers. Whether for cost or comfort reasons, some people aren't ready for a PC. But they may be more than willing to improve their television experi-



## CONVERGENCE: NOT JUST A CUTE BUZZWORD!

when you pulled the string at the back of her neck.) One *AnnMasters* doll is \$149, the PC Pack is \$69.95, and software titles are \$44.95 each. At that price, I don't expect to find one under my Christmas tree this year. (I never got a Miss Beasley doll either.)

Here's the real point: Convergence is more than a catchy buzzword, and players across the industry are ready to pounce on the big opportunity. NCR, for instance, has patented significant attention for its Microvision Bank prototype — a flat-panel computer built into the door of a microwave oven. The idea is to provide services like banking, e-mail and shopping through an easy interface, without a screen or keyboard. (The technology recently won "Technology Innovation of the Year" at an Annual Technology for Retail Banking conference.)

CCW's Associate Editor Jeff Evans reports technology is melting the distinctions between digital still image cameras and digital video cameras. See "The Universal Eye," page 36. As quality improves and prices drop, digital cameras are increasingly appealing.

Combine that camera with a notebook and modem and productivity skyrocket for insurance adjusters, real estate agents and journalists. For starters, CCW's *Lab Test* (page 30), examines the so-called "mashings" of the notebook market this issue, leaving the functionality available at affordable prices.

To all our readers, from the staff at *Canadian Computer Wholesaler*, have a wonderful holiday season! ☺

Grace Carmichael  
Editor

ences, access the Web and send and receive e-mail.

And don't forget the new *AnnMasters*. The new *Ann* and *Ann* are intended for ages four to eight. When you squeeze the toys here or there, they'll tell some, make comments or suggest games. They can also interact with various semi-educational computer games. With 5,000-word vocabularies, (10,000 when hooked to the PC) these toys are a far cry from the Miss Beasley doll I owned when I was a kid. (She said hello

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## You to Overclocking

On Aug. 30, I purchased a Celeron 330 with an Abit DH6 motherboard and an ATX case for \$425 including taxes. I now have a games PC running Battlefield 4 at a 112MHz + 4448Hz for less than the price of a Pentium II 300MHz CPU. It even runs pretty fast as a Web browser and a mail client.

By simply going to the Celeron from the AMD my frame rates in Quake 2 increased dramatically from 19 fps to 95 fps! (95 fps is considered the minimum for decent network/internet game play).

As well, most of the newer games such as Electronic Arts NHL 05, Tomb Raider and Unreal thing all run 30-60 frames per second accelerated video control run quite smoothly on this system. In the Spring of '98 I will purchase a new flexi TNT 3D/2D video card to keep my system current, and then in the Fall drop in a Pentium II 300MHz chip. As you can see, this system should stay current for the next two years for a minimal cost of \$200.

I read Craig Thompson's letter (CCW November page 1). His point is well taken for users who need PCs for business applications. People also need to be aware of the consequences of overclocking such as increased heat, reduced CPU lifespan and voltage tolerances.

I added a 3.5-inch fan for additional cooling.

Art Prober  
Field service rep.  
PCTel systems support  
Burnaby, B.C.

## Thanks for Motherboard Article

I really enjoyed, "Test driving the 760MHz Motherboards" (CCW/November page 38). It was a very well-written and informative article.

I cannot praise the ADPxx AGX8Pro enough. I use this board in my personal systems as well as in customers' computers. I believe that it is one of the best Super 7 boards.

You mentioned that the Transcend's TS-48X board has a BIOS feature to boot from ASP first. The AGX8Pro also has this feature with BIOS Version 1.29, so you can select the ASP as the PCI video card to be the primary display. This subset of info probably wasn't available before press time, but just thought you might be interested in it.

(The BIOS update is available at the ADPxx Web site: <http://www.aspro-usa.com> or <http://www.aspro.com.tw>).

Keep up the great work with Canadian Computer Weekender. It is truly a great publication.

Craig Brown  
President,  
Simpli Computer Solutions  
Amherstburg, Ont.

## Don't Underestimate Engineers

Regarding "A basic flaw in PC design is the nature of the PC itself: a box full of electrical components which was designed by engineers, not musicians" (CCW October, page 43). What type of musical equipment does Jeff Evans think is designed by musicians? Guitars? Traps? Loud speakers? Hi-Fi amplifiers? Cassettes?

Most things in this world are designed by engineers. Although our current mass market PCs aren't primarily intended to be music boxes, there's no reason you couldn't have a "PC for musicians." Sooner or later someone will put together a low-cost, low-distortion Pentium III for PowerPC box with a state-of-the-art sound card and market it to musicians. It's probably just a matter of time before some engineer designs and builds one. ☐

David Brown  
Senior design engineer  
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Delville, Ont.

## Letters to the Editor

We welcome your letters on industry issues and concerns, as well as your comments on our magazine.

We reserve the right to edit your contributions for length and clarity.

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# Comdex/Fall: Less is More?

by Jeff Evers and Grace Caselman



**T**his year's Comdex/Fall show in Las Vegas was focused on making technology simpler, smaller, more usable and less expensive.

Of course, digital cameras, large flat-screen, ultra-portable notebooks, PCI and USB connectivity products were out in full force. But some major players were notably absent from Comdex this year, including IBM, Compaq and Netscape. An IBM official said the company had devoted its marketing money to better spend on smaller, more targeted events. Of note, the company still held demonstrations and meetings with select customers during Comdex in local cities.

Despite the skip-jumps, Comdex is expected about 220,000 attendees and 1,600 exhibiting companies.

Bill Gates led off the show with the first keynote speech, promising to make Windows simpler and more robust. An unexpected highlight was an appearance by a killed Microsoft researcher named Bill Hill, who demonstrated a new text display technology called ClearType. ClearType has much more readable screen text displayed on a LCD flat-panel screen, a huge benefit to people who spend a lot of time reading documents on-line. It will be a further incentive for mainstream computer users to consider flat panels over traditional CRT monitors. The technology is expected to increase flat display resolution by as much as 300 per cent and will be incorporated into the operating system of some future date, a matter of "months, not years" said an Microsoft spokesperson.

Oracle Corp. CEO Larry Ellison provided a strong antidote to the Windows view of the universe at his keynote, wittily ridiculing the notion of millions of small NT servers popping up in restaurants, home offices and medical centers. Characterizing decentralized servers as a very "bad idea," Ellison outlined his vision of a connected business and home computing world, where professionally managed, reliable, cost-effective servers running database (Oracle databases especially) would enable all manner of improvements and innovations in business, education, and consumer services.

On the trade show floor, there was a strong push towards LCD and plasma flat-panel displays, ranging from postage-stamp-sized LCDs mounted in eyeglass frames to 50-inch wall-mounted plasma screens. NEC, Sharp, Panasonic and others pushed prices on 13- and 15-inch LCD screens well below the US\$1,000 price point, and said sales finally seemed poised for major growth in 1999.

Windows CE-based handhelds and mini laptops with color screens were also commonplace, from varieties such as HP Sharp and Cuso.

The real point-of-interest at the Sony booth had to be Memory Sticks — a proposed solution to inexpensive storage of digital content. The tiny storage medium is shorter than a stick of *Amor Fortis* gum, and not much thicker. Naoya Sasaki, a marketing manager for Sony Electronics, based in San Jose, Calif., said the flash memory sticks, which are mounted in hard plastic, are more durable, reliable and cheaper than compact flash. (The sticks also have less compact jam than compact flash.) Memory Sticks are currently available in 4MB

and 16MB versions, (priced at US\$34.99 and US\$44.99, respectively). They handle all kinds of digital content, and by spring, Sony intends to build Memory Stick slots into a number of products, including cell and video cameras, sound recorders and notebooks. Meanwhile, the sticks are shipping and can be used with a PC Card adapter.

Storage was a big focus at the show, ranging from Imagen's Click! removable mass hard drive, to Imation's high-capacity SuperDisk floppies, to tape backup libraries from Overland and Hewlett-Packard. DVD also showed great strength, including reversible DVD systems, though conflicts over standards will continue to hold back progress in this arena.

Home networking was a significant theme. Eigonet Inc., as part of the Home Phoneline Networking Alliance (HomePNA), launched its slane (0.2 chips) to let homes or small businesses plug home networks by plugging into existing phone lines. Products from third parties based on this chipset are expected in Q3 '99, to deliver up to 10Mbps networking over regular phone lines. The Ethernet standards are available in the participating PCs, at an expected cost of about US\$100 per card.

Competing solutions from companies such as Diger, Unix-based Inteligica, want to make home networking even easier, using the ubiquitous electrical outlets, which are substantially more prevalent than phone jacks. The company's Passport product (currently shipping in the U.S., but not yet in Canada) will network two PCs and a printer at 200Kbps in a home or small business at a price of US\$199. A small device connects into each PC's parallel port and plugs into an electrical outlet. (Software needs to be loaded onto the PC too, of course.)

Concurrent Connect's Apollo U2 is a combination hardware/software solution designed to let users attach a second monitor and keyboard to a PC, to let two people to simultaneously share one computer, including Internet access and peripherals.

Both Microsoft Corp. and Corel Corp. demonstrated their upcoming office suites. Corel's WordPerfect 2000 suite, due out in early 1999, will include the Paradox 9 relational database, the Trellis 2 e-Web authoring and presentation tool, the Nordix Internet publishing tool and the Corel Print Office publishing software.

Beta 2 of Microsoft Office 2000 became publicly available in mid-November. (Buy <http://www.microsoft.com/office/2000/office/CPHY/default.asp>) Features include the ability to publish Office documents as HTML files for use on the Web. Intranets are supported, with built-in formats for collaboration, subscriptions, justification and searches. Menus adapt to users' preferences, by tracking their usage patterns.

Alcatel will ship its new VP304 Videophone early in the new year. Over regular phone lines, users can get picture-in-picture video-conferencing, priced at US\$399 per phone.

Canadian companies at Comdex included Calgary's WLAN. While the company's wireless products currently transmit at up to 4MB/sec., by Q2 '99, WLAN plans to introduce technology capable of 30MB/sec.

And X-Portal, priced at \$49.95, is an Internet search compiler from Toronto's Kaskadia Consulting Services Ltd. The software automatically strips out the ads, junk and other time-wasting noise from Internet searches. It uses software scans to deliver search results with stunning speed: a nightmare for Web advertisers, but a genuine boon for Web surfers looking for speed and simplicity. □

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Buffer Size (KB)	16				
• PIO Mode 4 (Full-erase)	16.4				
• Ultra DMA	33.3	33.3	33.3	33.3	33.3
Buffer Size (KB)	512	512	512	512	512
Rotational Speed (RPM)	5,400	5,400	5,400	5,400	5,400
Warranty (years)	3	3	3	3	3

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# Flyweights



by  
David Troska

Ever since Radio Shack introduced the Tandy Model 100 in 1983, the computer industry has been on a quest to design the ideal digital companion—a device both light enough and powerful enough to be useful as a constant carry-along.

The upper end of this market has been defined by ultra-light notebook computers. These are light and powerful, but also have tended to be quite costly. At the other end are the pocket-sized organizers, personal digital assistants (PDAs) and handheld computers. While these are less expensive to buy, they are also quite limited, compared to full-fledged notebook computers. In the middle is a sizable gap that is a minefield, no opportunity and increasingly a battleground where notebook and handheld computers will fight for turf.

Pushing the handheld PDA up-market are machines based on Jupiter, the latest variation of the Windows CE operating system. Coming down from the notebook side, we see a number of manufacturers stuffing the power of Pentium notebook computers into increasingly tiny packages.

## Jupiter Rises

Microsoft introduced Jupiter, also called Windows CE HPC (Pro Edition), in early October. Among the enhancements are support for more kinds of hardware, from full-size screens to mice, an improved Pocket Outlook e-mail client, improved database support and improved synchronization.

Horizon-Placid Canada recently showed CCV its Jornada 820 handheld PC, which runs the Jupiter version of Windows CE as the operating system. The 2.5-pound Jornada looks a lot like one of the new crop of tiny Pentium mini-notebook computers. It has an 8.2-inch color screen that will display a full 640 by 480 pixels, and a near (90 per cent) full-size keyboard. Unlike other CE devices, the Jornada isn't a touch-screen device—it has a built-in trackball for cursor control.

The unit is powered by a StrongARM processor operating at 190MHz. It comes with 16MB of RAM that can be upgraded to 32MB, plus 16MB of ROM. It also has a built-in 56Kbps modem.

As a Windows CE device, available software is limited to Microsoft's Pocket Office suite, along with a few third-party applications.

HP characterizes the Jornada as a 2.5-pound e-mail companion. The device will work for approximately 10 hours on a single charge (a

will  
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Lap



See P.58

higher-capacity battery, good for about 15 hours, is available as an option).

The Jornada isn't intended to be an alternative to a PC, but rather a companion, says Paul Patterson, HP Canada's sales development manager for mobile products. Patterson says the Jornada offers convenience and better manageability. For example, it doesn't have a hard drive and applications are fixed in ROM—uses as support and management benefits because user-induced errors arising from loading untrusted applications that crash the machine are largely eliminated.

## The Incredible Shrinking PC

Contrast the Jornada with latest crop of full-featured mini-notebook computers. Sony's recently introduced PCG-965F weighs a half-pound more (2.97 pounds), and costs more than twice as much (\$1,568 for the Jornada 820, \$3,699 for the Vuo). However, the Sony offers a full-blown Pentium computer in that tiny shell: 266MHz processor, 64MB of RAM, a 4.3GB hard drive and a 10.4-inch TFT screen.

Similarly, Toshiba of Canada has just announced a couple of new models in its tiny PC stable: the Portege 3010CT and a Libretto 110CT. The Portege 3010 sounds quite similar to the Vuo, although at \$3,379 it is a bit less expensive. The Portege comes with a 10.4-inch active-matrix screen, a 266MHz Pentium processor, a 4.3GB hard drive and 32MB of RAM. The silver-colored ultra-light has a magnesium alloy case for increased rigidity, and the unit is just 0.78 inches thick and weighs less than three pounds.

The two-pound Libretto 110CT uses a 200MHz Pentium processor and has a 4.3GB hard drive built in. It will sell for \$3,109.

Although a few other Japanese notebook computer makers (Panasonic and Hitachi, for example) have been making mini-notebooks for a few years, these are primarily for Japanese domestic or Asian markets. With Toshiba's launch of the Libretto in North America, the mini-notebook category was established here. However, it has been a small niche market.

Whether Japan-inspired HPCs or shrinking notebook PCs will be able to capture this category is still a big question mark. While the size of these two platforms is converging, the gap in functionality and cost remains significant. ■

David Troska is a journalist specializing in high-technology reporting and is Editor of *The Computer Paper*. He can be reached at [dtdt@tpc.ca](mailto:dtdt@tpc.ca).

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# Sony VAIO World Conference: Digital Convergence Arrives!



By  
Jeff Eron

**S**ony Corp.'s recent VAIO World Conference in Tokyo publicly marked a drive to be the world leader in the integration of video, audio, computer and telecommunications technologies.

Sony has long led in both professional and consumer video and audio, and more recently has been a major player in feature film, video and music content creation. The company now intends to play a global role as the chief integrator of computers with traditional media. Sony has revolutionized the desktop video market over the last two years, with its introduction of an impressive 6-mm digital videotape format, and its promotion of the IEEE 1394 FireWire digital data communications standard (the Sony version of FireWire is called iLink). With the advent of this low-cost all-digital solution for video capture and editing, most of the complications of mixing analog video with digital computer systems have been eliminated.

Most Canadian desktop video VAIOs and system integrations would confirm Sony has been the catalyst and the leader in this rapid evolution.

## iLink, You Link, We All Link

Sony is including iLink connectors in its latest VAIO desktop and notebook PCs. Intel Corp., along with other major makers of PC motherboards, intends to do likewise in the months to come. By this time next year, FireWire/iLink connectors will be a readily available feature on many PCs. That will help spark a rapid rise in the use of the PC as a video creation tool for both consumers and professionals.

## Why Sony? Why VAIO?

There has been some market confusion about why Sony, a traditionally premium priced-manufacturer, would decide to enter the orthodox consumer PC market.

Sony's philosophy behind the launch of the VAIO personal computer line makes a lot more sense when the company's history, technology portfolio, and product lines are considered as a whole. Since its founding in the ruins of post World War II Japan, Sony has been a uniquely creative company when it came to seeing, new trends and developing, fundamental new technologies and products. Sony secured Japanese rights to the newly invented transistor in the early 1950s, and developed the portable transistor radio. The company created the videocassette recorder and camera, and with Philips, introduced the first CD audio player. Its camcorders, disk drives, chips and other components are used as millions of computer systems all over the world.

In a way that's only partly matched even by industry giant IBM Corp., Sony has strength across all the component parts needed to achieve convergence. Sony's grand plan is to leverage all its diverse areas of expertise, from all the various divisions of the corporation (video, dis-

play, audio, electronics, storage, microelectronics and telecom), to be the first to provide a truly seamless, usable convergence solution.

The VAIO computer platform, is thus not just another PC line. Rather, it is the consequence of Sony's evolution into the leading convergence power.

## Band Practice

Sony's drive to convergence is a mammoth task, not only in terms of creating the technological components, but in regards to coordinating all areas of the company in the creation of integrated products that will appeal to a mainstream market. Sony executives expressed some frustration at the difficulty of getting all the parts of the company — divisions, people and products — to work as part of the grand plan. (For example, the new 16 FD 200MB floppy disk product has taken longer to reach the market than was hoped, possibly having its chances to be adopted in the next three-string standard.)

However, Sony is not exactly moving slowly. A new generation of Sony products was on display at the VAIO World Conference, ranging from VAIO desktop PCs configured for digital video and photography production, to DVD and mini-disk players and recorders, to the latest Motion digital cameras, and the ultra-light VAIO S85 sub-notebooks.

The conference also featured the one-pound CI handheld PC, a full-powered Windows 95 computer that can fit in a pocket. A tiny "Image box," for transmitting analog video to digital format was also shown.

Finally, as a harbinger of consumer electronic things to come, a Robot Pet was demonstrated — a digital dog with sophisticated autonomous movement, motion sensors, and a simulated "personality" that uncannily mimicked the behavior of a real dog.

## Inventing the Future

Following the official event, journalists toured Sony's advanced research lab in Tokyo, where artificial digital life form simulations, new user interface technologies, and ultra high-speed Internet technologies are being developed. Also, Sony demonstrated new applications in digital theatre, professional video production, digital photography and high-speed videocommunicating.

Of course, Sony's original mission statement included the aspiration that "imagination must be allowed to dream." For more than 50 years, Sony's technological dreaming has helped shape the modern world. The company shows no signs of losing its ability to see new visions, and turn them into reality. ☐

*Jeff Eron is Associate Editor of Canadian Computer Weekender. He can be reached at jeff@wpcan.com.*

*"Sony's drive to convergence is a mammoth task, not only in terms of creating the technological components, but in regards to coordinating all areas of the company in the creation of integrated products that will appeal to a mainstream market."*

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*Computing Canada, March 1998*

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*Art Evans—Computer Paper, July 1998*

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*The Computer Paper, May 1998*



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*Computing Canada, April 1998*



Dragon Eye D87A,  
18" CRT, 16" dia. view  
*Computing Canada, April 1998*



Dragon Eye D73A,  
17" CRT, 16" dia. view  
*Ben Grevel, Computer Paper, July 1998*  
*Ben Grevel, CCA, August 1998*



Dragon Eye D54,  
13" CRT, 14" dia. view  
*Edwin Davies, Computer Paper, May 1998*

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# The *Easy-Going* PeopleSoft?

by Grace Caselman

Isn't any coincidence that enterprise software vendor, PeopleSoft Inc., is named in a *Canadian* news with the selling name of Pleasant?

"We are moving more and more business from the fact that companies like us and trust us," said Jeffrey Read, director of marketing for PeopleSoft Canada Ltd. "We're very people-based in our overall philosophy."

PeopleSoft claims to have 97 per cent customer satisfaction, and indeed one of the core parts of its philosophy is "outstanding customer service."

The personality approach may be paying off. In 1997, the company reported a net income of US\$108.3 million on revenues of US\$415.7 million, which translates to 41 per cent growth over the previous year. The Canadian subsidiary reported 77 per cent revenue growth. Estimated revenues were \$79 million in 1997, according to International Data Corp. (Canada) Ltd.

IDC Canada listed PeopleSoft Canada as second in size to SAP Canada (Canadian revenues were \$185 million in 1997). PeopleSoft employs 4,500 people worldwide, 360 of those are spread across six Canadian offices. (That's a significant increase, from 110 Canadian employees in 1994.) Local research and development activities include Canadianization of products and French Canadian versions.

Historically the company's strength was in human resources/payroll software, but the Financials module added HR in 1987. According to IDC, PeopleSoft's strong vertical markets include government, financial services, manufacturing and higher education. The company often runs more than 40 companies for Financials, human resources, payroll, distribution, manufacturing and supply chain solutions (in Ontario, Canada's Algoma Steel) because the 1,000th customer to implement PeopleSoft Human Resources Management Solution.

PeopleSoft likes to promote quick installation processes. A typical installation would take about six months, and Read, who dismissed claims of very speedy SAP installations. "We could say we have three-week installations, if we wanted. We look at time to benefit."

At a press briefing this fall in Pleasanton, PeopleSoft focused a lot of attention on its Treasury product — released last May. That functionality is crucial to the matter of control in an organization, and Read, particularly market volatility and complex global business structures. According to a recent PeopleSoft survey of 164 senior financial executives, cash management is "becoming more important in a turbulent economy." Fifty per cent of the executives said they've started to increase their focus on cash management over the past three years. (That figure is expected to increase to 71 per cent over the next three years.)

And Read said up to 51 per cent of corporate respondents attributed between five to 10 or more per cent of net income directly to cash management. Cash management, according to Tom Knight, PeopleSoft's own global treasury manager, is "The effective manage-

ment and utilization of funds flow to meet the short-term and long-term needs of the organization."

The first Canadian company to license Treasury (as part of the full enterprise suite of PeopleSoft's Enterprise Resource Planning software) was Montreal-based GTC Transcontinental Group. (The pricing and communications company earned revenues of \$1.12 billion in 1997, and has 9,000 employees spread over 40 offices.)

GTC Transcontinental's first implementation phase reportedly took less than six months and included deployment of the Financials, Distribution, Human Resources and Payroll modules. The full rollout to all locations is expected to be completed by July '99.

Roselyn Lague, project manager and director of re-engineering at GTC Transcontinental, said his company was a decentralized organization that prevented redundancies. "Instead of having 25 separate accounting departments, we shared services center will allow a core group of financial specialists to handle the majority of our financial operations in one centralized location."

The organization had adopted SAP in 1991, but Lague commented, "SAP definitely takes much longer, and we didn't want to run the risk. We had the significant pressure of the year 2000, and we couldn't run the risk, not to complete the installation by the year 2000."

PeopleSoft has also been making a big push into what it calls the "mid-market" — basically targeting companies with revenues of between \$50 million and \$150 million, said Read. (Pricing for the PeopleSoft solution typically starts at about \$80,000, Read said.)

The company says it has 700 partners worldwide. Ottawa-based Cogeco Inc.'s GL-AP technology, for example, is embedded in the PeopleSoft software.

Bob Moorhead, Compag Computer Corp's PeopleSoft sales manager for the Americas, said 60 per cent of PeopleSoft's NT business is on Compag hardware.

Joshua Greenbaum, president of Enterprise Applications Consulting in Berkeley, Calif., said PeopleSoft has a good focus on the analysis of organizational data, and has "tapped the user" on what CEOs and CFOs can do with the information they receive. As to whether or not a PeopleSoft implementation

means less upheaval than competitors' implementations, Greenbaum said, "To a certain extent it's up to the customer itself. SAP is so much more functional...SAP has a much greater propensity to force a company to make great changes, but it's not a requirement."

"PeopleSoft is a company that can't market the breadth of functionality of SAP," noted Greenbaum. "On the other hand, this is a company that is extremely well regarded by its customers for customer relations and product quality." ■

Grace Caselman is Editor of Canadian Computer Weeklies. She can be reached at [grace@caselman.ca](mailto:grace@caselman.ca)



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Recommended. CHW Test Center Oct. 1999

Age Group	Male (%)	Female (%)
18-24	~15	~10
25-34	~25	~20
35-44	~35	~30
45-54	~45	~40
55-64	~55	~50
65-74	~65	~60
75-84	~75	~70
85+	~85	~80



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Age Group	Percentage of Respondents
18-29	80%
30-49	75%
50-64	65%
65+	55%



Quantum Magic  
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A bar chart titled 'Percentage of respondents by age group who believe that the current U.S. president is a good person.' The x-axis represents age groups: 18-29, 30-39, 40-49, 50-59, 60-69, 70-79, and 80+. The y-axis represents the percentage, ranging from 0 to 100 in increments of 10. The bars show the following approximate percentages: 18-29 (65%), 30-39 (60%), 40-49 (55%), 50-59 (50%), 60-69 (45%), 70-79 (40%), and 80+ (35%).

Age Group	Percentage
18-29	65%
30-39	60%
40-49	55%
50-59	50%
60-69	45%
70-79	40%
80+	35%



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Year	Percentage
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2006	75%
2007	78%
2008	72%
2009	75%



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Figure 19



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# Power Notebooks, at Noteworthy Prices!

• by Scott Carmichael •



For many workers in today's information world, a portable computer can literally mean the difference between productivity and failure.

For the so-called "road warriors," computing on-the-go is increasingly crucial, but it can also be vital for employees simply needing to take work home on the weekend.

Notebook computers allow mobile users to do nearly everything they do on a desktop machine, without being tied to their desks or having to deal with small and awkward machines. The only problem is price.

Notebook machines are always much more expensive than their desktop counterparts. But it's not cheap for manufacturers to condense desktop technology into notebook-sized components. For the absolute lowest in notebook technology, it is not uncommon to expect to pay between \$1,000 and \$15,000. It's certainly possible to get notebook

computers for around \$1,000, but many notebooks in that range are slow, clunky and may not have the latest features.

Somewhere between those extremes lie machines worth exploring, with mid-range notebooks offering a nice balance between features and price. Although notebooks in this range may not have the latest processor or all the peripherals most offer, the performance and functionality mobile users need without requiring a second mortgage on the house.

## The Test

We asked readers to submit notebooks in the \$1,000 to \$4,000 street price range. Benchmarking was performed using SIAPC's SystemBench software. During testing, systems were set to a resolution of 600 by 400 with a 16-bit color depth, power management software was disabled, and

machines were powered by their AC cords.

Mit also ran an optional battery test using software by Dave Hughes at Archiver Software Computer Services in Florida. Mit is important to note this only provided us with a half-past figure, and that battery life tends to vary from charge to charge and battery to battery. It's also important to note use of components like the CD-ROM drive the battery more quickly. That means individual mileage may vary.

## Epiga LifeBook C330

Street Price: \$2,499

**Pros** With a 12.1-inch screen and 600 by 600 resolution, the screen is a bit on the small side, but a "retouched" with a 1,600 by 1,200 viewable area. Incorporating two buttons for scrolling, and a cursor button with directional scrolling built in, the EpigaTrac technology is a nice alternative to the a touch-pad.

The notebook has an external volume control for quick and easy adjustment.

The EPT as it is known has an external brightness control.

The keys for the components support hot-swapping.

**Cons** Although the LifeBook C330 supports hot-swapping of components, the release mechanism for the components is hidden under the mouse, which makes removal of the components a bit awkward while the machine is running. The EpigaTrac is a bit too responsive at times. Detail work can be a bit difficult if the settings are set to faster speeds, as the user can easily overshoot the target. This can be fixed by slowing down the pointer, but then it takes a minute to get to items on the other side of the screen.

Although the floppy drive can be attached externally via cable, including a slide the machine means sectioning the battery.

Rupture has just introduced its notebook line in Canada, and it's off to a running start with the LifeBook line. At the more budget-conscious end of the LifeBook scale, the standard LifeBook C330 retails for \$2,499 but comes with just 32MB of RAM. To meet the pricing requirements for this month's test, the C330 was upgraded to include another 32MB of RAM, which increased the system performance accordingly.

The C330 has a number of nice details to it. Although both the EpigaTrac and the hot-swapping ability could use a bit of work for more than usability, both are good indications of where the LifeBook line is headed, and it looks impressive.



## NEC VersaNote VN300

Street Price: \$2,499

**Pros** The note equates in the CD-ROM drive, floppy drive and battery simultaneously. The 12.1-inch TFT display allows for a screen resolution of 1,024 by 768. The keyboard and palm rest setup is very usable. The machine comes with a 56Kbps modem built-in.

**Cons** If you close the lid and open it again, the machine takes a while to wake up. With only 32MB of RAM onboard, the VersaNote isn't the speediest machine around.

With the battery, CD-ROM and floppy drives all coming inside the case, the VersaNote is already doing well. With the good display, nice keyboard and the built-in modem, it becomes even better, and well-suited to life on the road. The biggest drawback is the RAM, which may not be sufficient for some power users. A bit of extra RAM, though, and this machine is a great machine to travel with.



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**Samsung N100-T3****Street Price:** £3,599

**Pros:** The N100 T3 is powered by a 260MHz AMD K6 chip, which turned in a very good performance. The notebook also has the option for Pentium chips of up to 266MHz, for users who aren't keen on the K6. The machine ships with 128MB of RAM.

At 1,024 by 768, the resolution is high quality, with more room on the desktop. The larger case fits the room to hold the CD-ROM drive, floppy drive and battery simultaneously. The 6GB hard drive is one of the larger drives in the portable world at the moment.

**Cons:** Because of the inclusion of all of the major components simultaneously the notebook is a bit on the thick side. Although the N100 comes with a 56Kbps modem, it ships as a PC Card, meaning that there is effectively one less available slot, when installed.

Based in Naples, Italy, Samsung has made a great name for itself in the desktop replacement field. The N100 T3 has good performance, and everything is included in the case to minimise downtime due to component swapping.

**Compaq Armada 1500NW****Street Price:** £3,400

**Pros:** The notebook has sufficient room in the case for the CD-ROM drive, floppy drive and battery to be installed simultaneously. There are four programmable keys above the regular keyboard, for setting up macros, for example. The speaker system sounds quite good.

There is a physical volume control on the exterior of case, which makes it easier to quickly adjust the sound. The notebook ships with an external 56Kbps modem.

**Cons:** The speakers have been placed directly under the area where the user's forearms and wrists rest, which reflects the sound. The maximum horizontal resolution on the 12.1-inch screen is 800 by 600 pixels. The machine ships with Windows 95 instead of Windows 98.

There are no Windows keys on this model. We emphasise this because Windows keys make using the Start Menu on a portable machine much easier. Scrolling through the Start Menu using either a touchpad or track-point can be a real chore. This is one of the thicker notebooks in the roundup.

In the end, this is quite a nice machine for the travel, with all of the necessary components (floppy drive, CD-ROM drive, battery and modem) included at the same time. (Note: Although the Compaq notebook did not achieve a great score for its benchmarking, this may be the result of a strip of a number of factors, including incompatibility with the scripts in the benchmarking suite. This is likely not something that will affect users.)

**Ultara 1100****Street Price:** £3,399

**Pros:** The 1100 comes with a 300MHz processor. Pentium II processor and 128MB of RAM, and turned in a high benchmarking score.

At 14.1 inches, the screen is nice and spacious. The case holds the CD-ROM drive, floppy drive and battery simultaneously.

The touch-pad on this model is one of the nicer ones.

The 1100 comes with a carrying case.

The case contains an RCA video-capture port and a TV-out port.

**Cons:** The 3.1GB hard drive is a bit small, and there's no modem with this particular configuration of the machine. However, it's worth noting that the standard configuration of this model comes with a 4GB hard drive and a 56Kbps PC Card modem, for a \$4,228 street price.

Ultara's 1100 is a great choice for a desktop replacement model, with a larger screen, very usable touch-pad, fast processor and lots of RAM. As everything is included within the case, it becomes a great travelling machine as well. (Regular travellers would be advised to drop the extra money and get the regular configuration with the larger hard drive and the PC Card slot module.) With the extra video capture and output options, it becomes even more useful for multimedia, as well. Even at the full price, it's definitely worth considering. Special note: Passlions can custom-configure Ultara's systems at <http://www.ultara.com>, by logging in with either valid fax or e-mail ver.



Performance

**Toshiba Satellite 4020CCT****Street Price:** £3,799

**Pros:** The 300MHz Pentium II offers good performance. The pointer control is the AccuPoint controller, which is like IBM's track-point (for users who aren't really comfortable using the touch-pad), the AccuPoint offers a great alternative. The floppy drive, CD-ROM drive and battery all fit into the case simultaneously.

Although it's not into the same spot as on desktop keyboards, Toshiba has included a Windows key in the upper right-hand corner of the keyboard, for a user's use.

The sound on this machine is quite good.

**Cons:** The left- and right-click button setup may be a bit awkward for some users, with one above the other, as opposed to left and right orientation. There is no modem with this configuration.

At 2.1 inches, the 4020 is a bit on the thick side.

Toshiba's got one of the best names in the notebook business, and it's easy to see why with the Satellite 4020CCT model. It's got good sound, all the major components are included in the case simultaneously, and it's got a great pointer control. Although there is no modem shipped on the machine, the Satellite 4020CCT is otherwise a complete machine that should make most people happy.



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## IMAG Verity 660COT

Street Price: \$2,899

**Pros:** The Verity ships with the 300MHz Pentium II processor and 64MB of RAM for speedy performance. The touch-pad features SpeedScroll technology, which allows the user to scroll up/down or left/right in a window with just a touch along the edge of the touch-pad. The 660COT comes with its own carrying case. The notebook sports a nice, clean design.

**Cons:** No modem is included with this configuration. The floppy drive must be swapped with the CD-ROM drive.

Probably more familiar to most of us as a monitor company, IMAG also makes a line of portable computers. The 660COT is a basic-looking machine with a total panel under the hood, including a speedy 300MHz Pentium II processor and a lot of RAM. Users who get tired of aren't big fans of the touch-pad may find the Speed Scroll function a useful addition. On the other hand, the lack of modem and the need to swap the floppy drive in and out of the machine may make it less than ideal for people who are on the road a lot.

All in all, the 660COT is a powerful and usable machine.

## IBM ThinkPad 3860D

Street Price: \$2,499

**Pros:** Like the rest of the ThinkPads, the 3860D has a good solid case, making it more sturdy than most other portables.

The CD-ROM drive, floppy drive and battery are all in the case simultaneously, eliminating endless component switching and relocating.

There are external controls on the 3860D for both sound volume and the brightness of the screen, both of which save time searching for them on the desktop or on the road.

For users who aren't fans of the touch-pad, the track-point is a genuine pleasure to work with. It provides excellent pointer response without the hassle of "lift-and-touch," lift-and-tap (or sometimes necessary for covering large screen distances on the touch-pad).

The function keys are nicely sized and separated from the rest of the keyboard.

**Cons:** Like other models in the ThinkPad line, the 3860D is rather thick. With a 300MHz Pentium processor, the machine isn't one of the faster models available for the money.

The keyboard has no Windows keys, which can be a bit inconvenient. The ThinkPad uses the older Windows 3.0 operating system.

The 12.1-inch 640 by 480 passive screen may be too small for some users.

Even with a slower processor, older operating system and a smaller screen, the IBM ThinkPad 3860D is a wonderful machine to work with. IBM's attention to detail gives us a nice, sturdy case, a great keyboard, external controls volume and screen brightness, with all the components inside, and a wonderful pointer control. The 3860D is a great entry-level notebook from a legend.

## Sceptre SpeedX 7500T

Street Price: \$2,099

**Pros:** The use of the 266MHz Pentium II chip along with 64MB of RAM allows the 7500T to turn in a fast performance.

The 14.1-inch screen, with a resolution 1,024 by 768, is a great size, with lots of space. The SpeedX comes with a carrying case.

**Cons:** The user (has to) swap the floppy drive with the CD-ROM drive, which could be a bit inconvenient. There is no modem included in this configuration.

This machine turned in great performance in the benchmark tests with great components and a lot of RAM. A large TFT screen makes it easy to read, as does a wide variety of ports. Although the track pad was nice, we did find the lack of a modem and having to swap out the floppy for the CD-ROM drive a bit troublesome, otherwise, this is a great machine with a lot going for it.

## Hyperdata 5027B

Street Price: \$2,099

**Pros:** With a 300MHz Pentium II chip, the Hyperdata 5027B is one of the fastest notebooks tested this month. The 14.2-inch screen is a nice size, allowing a screen resolution of 1,024 by 768.

Stepping up from the world of CD-ROM, the 5027B includes a DVD-ROM drive. This makes it ready for the upcoming DVD revolution, when it becomes compatible with traditional CDs. The larger case allows the DVD drive, floppy drive and battery to be in the case at the same time, eliminating the need for component swapping and relocating.

As on a desktop keyboard, the Hyperdata's keyboard includes two Windows keys for increased usability. The 55GB hard drive is the largest included in this month's roundup.

The machine is well-set for ports, including video out, a game port, and two USB ports (which makes the machine ready for both the DVD and USB revolutions).

**Cons:** With this configuration, the modem isn't built in, and takes up one of the PCMCIA slots.

Hyperdata's notebooks are always a treat to look at, and the 5027B is no exception with a simple display and powerful processor, lots of RAM, a large hard drive and a DVD drive. Since all the components are already in the case (as used to switch CD-ROM drive with floppy or battery), the machine comes with a good selection of ports, the Hyperdata 5027B is a great notebook for the viewer looking to the future.

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Play CD ROM

Stop CD ROM

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Forward CD ROM

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**Twinshead Slimnote V62-300TZ****Suggested Retail Price:** \$3,845

**Pros:** The 300MHz Pentium chip is very powerful, and with the 4MB of RAM, helped this machine to turn in the best benchmarking scores for this roundup. The machine has two USB ports.

The case is large enough to hold the battery, CD-ROM and floppy drives simultaneously, eliminating the need for component switching and reboots.

There is a MIDI port/panel included, and hardware control of volume for speaker adjustment.

**Cons:** The touch-pad on the machine itself was a bit touchy and hard to use. The bright, silver/white coloring of the machine may not suit some tastes.

The Slimnote tested this month has a coloration suggestive of futuristic technology from old movies, but therein is a lot of power under the hood. In fact, the combination of components inside nudges the performance up substantially. With a modem onboard and two USB ports, it becomes even more attractive. The only thing that could be problematic is the touch-pad, which was overly picky and not very accurate on the notes tested. This is a great machine from a company that knows the ins and outs of notebooks.



Performance

**Winch VisionBook Pro 775****Suggested Retail Price:** \$1,395

**Pros:** This notebook has three bays along the front of the machine. The system's hard drive goes into one of these, and the other two will hold any combination of floppy drive, CD-ROM drive/battery.

It has both a modem and a 10/100-Base-T Ethernet connector.

Using the 300MHz Pentium II chip, the VisionBook turned in quite respectable speed. There are two Windows keys on the T1234 keyboard.

**Cons:** The user can't have the battery, floppy and CD-ROM drives inside the case at the same time, although the floppy drive can be attached externally via a USB. The CD and battery are inside. The 775s chugged through the battery charge quicker than most other machines, on our internal battery test.

On the road, the inability to have the floppy drive, CD-ROM drive and battery inside simultaneously may be problematic, as would be the lower battery life. But for desktop users or people moving between offices, with a network pack built in and a comfortably spaced keyboard, the VisionBook 775 may be just the thing.

**Sony VMD PCG-905F****Suggested Retail Price:** \$2,099

**Pros:** The incredibly small design makes it perfect for working in tight spaces. It has a 6GB hard drive and a modem inside.

The battery pack is set up at the point where the screen pivots away from the keyboard. When the battery pack is removed, a special attachment can be connected which has monitor, printer, serial, keyboard and mouse ports. This is an excellent design.

The 905 has both USB and an IEEE 1394 Firewire port.

**Cons:** Both the CD-ROM or floppy drives must be attached, which can be a bit awkward. Additionally, the user must find an extra place to plug in the power for the CD-ROM.

The screen is smaller, at just over 10 inches.

The speed met up to the performance on larger machines.

In a field where the thickness of the other machines tends to loiter around the two-inch mark, the 905 is less than one inch thick.

With that in mind, it's impressive that Sony has managed to squeeze inside a full 4GB hard drive, a modem, USB and Firewire ports into the body of the machine. Since use of the user thought, some connectors had to be made, and the most notable is that neither a floppy or CD-ROM drive is included in the body of the machine. However, the system is great for working in a tight space, like on an airplane. For those users, the tiny size of the machine and the power it manages to pack inside will make it the perfect pick.

**Compaq Presario 2105T****Suggested Retail Price:** \$4,000

**Pros:** The 2105T features a nice, simple and clean design which is pleasant to look at and easy to use. The most desktop keyboards, the 2105T has a Windows key on either side of the spacebar for increased usability. Although the machine ships with Windows 95, the OS is an option to upgrade to NT.

**Cons:** Both CD-ROM and floppy are a choice, but not use the same bay. The user can't have both attached internally at the same time.

With only 32MB standard, system performance is slower than it could be with more RAM.

There is no modem included with this configuration.

The 13.1-inch screen is a bit odd (small) size, and the 800-by-600 resolution is also a bit lower than other machines in this roundup.

The Compaq 2105T has a lot to recommend it, including the nice and simple design, memory expandability, and general usability. Though these traits make it great for the serious user, the lower amount of standard RAM, and the inability to put both the floppy and CD inside the case at the same time may put off those same users. The memory problem is easily solved, by putting additional RAM into the case, but the other will just require component swapping and rebooting.

The 2105T is a basic machine that's well worth considering. (Note: although the SRP is above \$4,000, the street price is under \$4,000 mark.)



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	Compaq Armada 1000MT	Samsung R530-JS	Fujitsu LifeBook E301	Lenovo ThinkPad R6000	HP EliteBook 8540	Asus Eee PC 1000A
Processor	Intel Core 2 Duo	Intel Core 2 Duo	Intel Core 2 Duo	Intel Core 2 Duo	Intel Core 2 Duo	Intel Core 2 Duo
RAM	2GB	2GB	2GB	2GB	2GB	2GB
Operating system	Windows 7	Windows 7	Windows 7	Windows 7	Windows 7	Windows 7
DVD burner	Yes	Yes	Yes	Yes	Yes	Yes
Hard drive	500GB	500GB	500GB	500GB	500GB	500GB
OS	Windows 7	Windows 7	Windows 7	Windows 7	Windows 7	Windows 7
Display	15.5 in.	15.5 in.	15.5 in.	15.5 in.	15.5 in.	15.5 in.
Power source	AC adapter	AC adapter	AC adapter	AC adapter	AC adapter	AC adapter
PCMCIA slots	1	1	1	1	1	1
USB ports	4	4	4	4	4	4
Modem	Yes	Yes	Yes	Yes	Yes	Yes
Max. battery life	6 hrs.	6 hrs.	6 hrs.	6 hrs.	6 hrs.	6 hrs.
Parallel port	Yes	Yes	Yes	Yes	Yes	Yes
Serial port	Yes	Yes	Yes	Yes	Yes	Yes
Expansion slots	1	1	1	1	1	1
Optical drive	Yes	Yes	Yes	Yes	Yes	Yes
Internal port	Yes	Yes	Yes	Yes	Yes	Yes
Memory	2GB	2GB	2GB	2GB	2GB	2GB
Weight	5.5 lbs.	5.5 lbs.	5.5 lbs.	5.5 lbs.	5.5 lbs.	5.5 lbs.
Dimensions	15.5 x 10.5 x 1.5	15.5 x 10.5 x 1.5	15.5 x 10.5 x 1.5	15.5 x 10.5 x 1.5	15.5 x 10.5 x 1.5	15.5 x 10.5 x 1.5
Starting MSRP	\$1,099	\$1,099	\$1,099	\$1,099	\$1,099	\$1,099
Color	Black	Black	Black	Black	Black	Black
Warranty	3 years	3 years	3 years	3 years	3 years	3 years
Price	\$1,099	\$1,099	\$1,099	\$1,099	\$1,099	\$1,099

## Overall

### Hypermedia 2007/08

This month, the winner was the HP EliteBook 8540. The HP EliteBook 8540 was still pretty close to the top of the heap. When you factor in a large screen, a good amount of RAM, and a DVD drive to boot, you've got a very good machine at a great price.

Steve Gervase is a Staff Writer for Computer World. He can be reached at [sgervase@computerworld.com](mailto:sgervase@computerworld.com).



# The Universal Eye

The Boundaries of Photography and Video are Blurring in the Computer Imaging Era

by Jeff Evans



Digital cameras are hot sales opportunities.

Indeed, according to market research, sales jumped from a few hundred thousand units in 1994 to about three million in 1998. The digital camera has very attractive features in its favor (essentially "free film," no developing charges and a familiar form factor and user interface). But early digital cameras were expensive, low in image resolution and quality, and tricky to connect to a computer. However, there has been a massive effort by digital camera makers to overcome the weaknesses, and consumers are voting with their wallets. In a quiet revolution, digital cameras are becoming a component of "the new computing." Fundamental digital camera technology and new product introductions are both advancing at light speed, compared to the progress of scanners. For example, in 1998, while the market for scanners will be considerable, it seems likely that the hotter product category will continue to be digital cameras.

In order to succeed in the mass market (as opposed to the graphics specialty market), a product has to fall below a certain threshold of difficulty in order to attract the general home and small business PC user. While many PC users can install a scanner and use it quite happily, many others do have problems (often due to an obscure hardware or software compatibility or configuration problem on the PC), and quickly become frustrated.

But once one works one's mind around the fundamentally lower resolution of digital cameras, the many advantages of these cameras make the appeal to PC users quite understandable.

## A CCD Is a CCD Is a CCD

Digital still cameras and modern digital video cameras are all based on an intricate Transfer Charge-Coupled Device (CCD) imaging element—a tiny, sophisticated device that can contain millions of microscopic light-sensitive components. According to *Newton's Telecom Dictionary*, "CCDs are used as image sensors in an array of elements in which charges are produced by light focused on a surface (CCDs consist of a rectangular array of hundreds of thousands) for and (most) of light-sensitive photo diodes. Light from a lens is focused on the photo diodes. This forms up electrons (charges) which accumulate in the photo diodes. The charges are periodically released into vertical shift registers which move them along by charge transfer to be amplified."

In other words, shine an image through a lens onto an active CCD, and that CCD will emit electrical charges that can be translated electronically into a digital pictorial replica of the original image.

It is up to the manufacturer to decide which package of appropriate optics, electronics and data storage features to wrap around the CCD, to determine what features the digital camera will have. The bitmapped images that result from information transmitted from a CCD can be stored on flash memory, diskette or hard drive, recorded on digital videotape, or displayed on a LCD or CRT monitor. In fact, there is no longer any reason to make an absolute distinction between digital still cameras and digital video cameras. They all use the same basic technology to transform light passed through a lens into detailed digital pictures. Depending what kinds of image conversion and storage systems a CCD is hooked up to, it can pass along both single pictures and streams of moving video frames.

Early digital cameras were limited to CCD arrays of about 320 by 200 pixels (64,000 pixels). Currently, the minimum resolution of a consumer digital camera's CCD is 640 by 480 (about 300,000 pixels). High-end digital cameras have megapixel CCDs, with around a million pixels. Pentax say consumer-level digital cameras (under \$1,000) can be expected with CCD arrays of 2,000 by 2,000 (or four million pixels), by the year 2000 or 2001.

Increasingly, the lines between digital video cameras and still cameras are blurring, as it becomes cheaper to include both still image and moving image options in the same relatively low-cost device. Many digital video cameras are intended for either full motion video conferencing, or single image capture.

Consumer digital camcorders have a still image capture mode in addition to the full motion standard mode.

Better quality consumer-level digital still cameras increasingly have the ability to capture short snippets of motion video and sound, up to the limit of their onboard RAM or integral disk drive capacity. The major bottleneck to digital cameras' ability to capture motion video tends to be the need for very large amounts of memory or onboard disk drives.

As inexpensive CCDs of ever-higher resolutions come onto the market and compact, inexpensive data storage options proliferate in the next couple of years, digital cameras



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capable of both still and moving image capture will become a standard part of daily life. They'll be present almost everywhere, and will be increasingly easy to connect to computers, directly to the Internet, video networks or printers.

## Memories to Go

Digital imaging devices are all memory hogs in terms of the file sizes high-resolution CCDs can generate. Even in a highly compressed JPEG format, a megapixel image (1,024 by 768 up to 1,600 by 1,200 pixels) can take up between 100KB and 400KB of storage capacity. Motion video streams in compressed formats such as Motion JPEG, AVI, MPEG 1, or even MPEG 2, can require between 60KB and 200KB per frame, and at about 30 frames per second, between 1.8MB and 6MB per second, or 10MB to 36MB per minute. Digital cameras have an endless appetite for memory. As higher memory capacity becomes cheap and available, users will want higher resolution, higher quality imagery.

For example, Iomega has introduced its tiny 40MB Click hard drive cartridge to meet this demand, while Sony has unveiled its small Memory Stick memory cartridges in alternatives to the industry-standard flash cartridges.

For storing huge amounts of full-motion video streams from a CCD camera, current options include the 6-minute maximum digital videotape format in consumer-level digital recorders. Digital video streams stored on digital tape can be copied at high speeds to a CD hard drive via a FireWire (also known as IEEE1394 or iLink) connection. The major limitation of FireWire is that it is still undergoing finalization as a standard, and is still rarely built into PCs or digital cameras. More common at the end of 1998 is the Universal Serial Bus (USB). While still not perfectly bug free and often offering slower data transfer rates, that serial or parallel port, USB delivers improved performance and ease of use.

Some current digital cameras get around the requirement for on-camera picture storage by allowing the user to directly beam pictures to a printer via an infrared port. Most (typically, digital still cameras) come preinstalled with enough internal memory chips to store anywhere from a few to a few dozen highest-resolution digital snapshots, and rely on a serial cable connection to download pictures to a PC for archiving, image processing, and printing.

The closest winner to the digital camera image storage/transfers sweepstakes is the Sony Mavica line. The Mavica has a 1.44MB floppy drive built into the camera body, allowing the user to save pictures directly to floppy and copy them to the PC simply by popping the floppy disk out of the camera and into the floppy drive on the PC.

Sony is expected to apply its 200MB HiFD floppy disk technology to the Mavica sooner rather than later. A HiFD disk option in the Mavica sometime in 1999 or 2000 would allow up to a couple of minutes of very high-quality, full-motion video and audio to be captured and transferred extremely simply and cheaply, effectively completing the imaging of digital photography and video.

## The Digital Camera Tango

Regulators and consumers are confronted with a bewildering range of choices in digital cameras at the end of 1998. There are more than 50 vendors and perhaps 100 models. Some basic parameters readers should keep in mind when looking for digital camera to buy are:

- **Resolution** — 640 by 480 raw CCD resolution is pretty much the minimum for a current digital still camera, but at the basic resolution, there is a strict limit to the price consumers will pay (around \$400 to \$500 as

of November). 800A resolution cameras, with CCD resolution of 800 by 600 pixels are probably the current sweet spot in terms of price/performance. Most Web pages are created at 800 by 600 resolution, making 800A cameras ideal for applications where the picture will be displayed on the Web and/or viewed on a 14-inch or 15-inch monitor. Megapixel cameras are the device machines, offering potentially good margins, but attracting fewer customers until prices decline further.

- **Memory** — Most digital cameras come with 2MB to 4MB of picture storage memory, plus software on flash memory or EPROM chips inside the camera. A major profit opportunity for retailers is to upsell the camera buyer to an extra 4MB or 8MB of memory, so most pictures can be captured between downloads.

- **Ease of Use/ergonomics** — Almost all consumers know how to use a point-and-click-style film camera. That's why a digital camera designed to mimic a film camera's functions, and which also offers the simplest controls is most likely to be a winner and require the least technical support or product returns. Cameras with an option selector wheel, such as the Fuji T90, are easier to use than those with a profusion of buttons and cryptic icons.

- **Optical Quality and Upgrade Options** — For all the sophisticated electronics inside a digital camera, the lenses range from professional to plastic throw-away camera in quality. The better models from Epson, Kodak, Olympus and Fuji, come with standard adapters for high-quality adjustable lenses, including telephoto lenses. Retailers who take the time to qualify their customers' needs, and who have sales staff who understand photography, can up-sell various digital photography charms to higher-margin add-on lenses, tripods, flashes, battery packs, and other accessories.

- **Batteries** — Some models use regular flashlight style AA batteries, which are cheap and easy to find. Rechargeable batteries are the best option for a heavy user. Other models use battery packs that resemble notebook PC batteries. They have higher voltage output, but proprietary form factors, high price and sometimes, heavier weight.

- **Software** — Camera-base software installed internally, or flash memory (which usually allows for bag fixes and upgrades from the PC or EPROM chips) (which need to be physically replaced to be upgraded). The bundled software controls the camera's options, including the image file formats, and the quality of image compression. As well, digital cameras come with a CD-ROM of Mac or Windows software, which lets the user control the downloading, storage, viewing, manipulating and printing of pictures from the camera to the computer.

## The Future

Some trends are clear: CCDs with up to 2,000 by 2,000 resolution are only a couple of years away. Advances in storage technology will make high-resolution, high-quality imaging affordable for the consumer market. Cameras the size of fingerprints will be embedded in portable devices and connected to the Internet. Successful products will be those with simple operation, flexibility of storage and display, lightness and compactness, and integration into overall computer, entertainment and telecom systems.

For retailers, some important principles of success with digital cameras are: listen to the customer and be prepared to move out of technologies as they become obsolete. Sell quality and customer satisfaction rather than just a low price, which too often translates to a high cost of ownership. ☐

*Jeff Elmer is Associate Editor of Canadian Computer Wholesaler. He can be reached at jef@tiscan.com.*



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# The Paperless Office

by John Heavin

When the personal computer began to appear on office desktops, we were told the paperless office was just around the corner. Instead, thanks to temperate high-quality laser and inkjet printers and the desire to have hard copies of everything, the modern office generates paper documents at an ever-increasing rate.

These developments over the last few years have finally made it more possible to escape from this morass of paper: responsive color scanners, CD-R or Zip drives, and a new breed of document management software packages.

## The Hardware

First, you need a good flatbed scanner. These are now available for less than \$200. They are easy to install and work much like a photocopier except that the "copy" is saved as an image file on the hard drive. A fairly busy office will want a scanner with an automatic document feeder (ADF) to reduce the labor component.

Secondly, a high-capacity removable storage device is needed. Image files tend to be quite large — 1MB or more per page on their raw form.

At my company, we use the Hewlett-Packard 7800 series CD-R writer. CD-R drives hold 650MB and sell for less than \$2 each. Thanks to Adaptive's DirectCD software that ships with the CD-R writer, you can copy, erase and reimage files just as you would with any other drive on your system. When "closed" the CD-R becomes a standard CD suitable for permanent read-only storage or distribution.

It is possible to store up to 5,000 black-

## Comes of Age



and when pages on a single CD-R in TIFF Group 4 format. We update our document-base weekly and distribute a single new CD each Monday. We recycle an amazing amount of paper we would previously have filed.

## The Software

Document management software is designed to solve the problem that arises once a few hundred scanned documents have been saved to disk. Without a filing system, these image files are as useless as a stack of 8-Kvz boxes full of unsorted paper. For this article we



Picture and document are displayed in the VisiOnix PaperPro desktop.

reviewed three popular document management/optical character recognition (OCR) packages: Camt, PageKeeper, VisiOnix's PaperPort and Kover's PagePro. Each provides a virtual filing system for image files, as well as sophisticated indexing features. Content can be indexed thanks to the OCR software that ships with these products.

### Product: PaperPort PaperPort Deluxe

Version: 5.1.1

Maker: VisiOnix Inc.

(<http://www.visi-onix.com>)

Price: \$329.99

Rating: A-

VisiOnix's PaperPort makes it easy to organize your image files. Simply drag and drop an existing image from its Windows folder to the PaperPort desktop. That copy is filed in the PaperPort directory system in a proprietary format and displays as a thumbnail in the desktop. Double-click the thumbnail to see the full-size image in PaperPort's "page view." Here you can change magnification or clean up the image. Back at the desktop view you may also click the icon button to bring images directly from the scanner to the PaperPort desktop.

To the left of the PaperPort desktop is a Windows Explorer-like directory tree. It is easy to create folders within folders in this directory structure by pressing Ctrl-R. For example, if you store a batch of invoices you could create an Invoices folder. Within that you may create a supplier folder for each of your suppliers, and within the supplier's folder you could create a folder for each month. Every folder has its own desktop. Working with the batch of scanned invoices simply

drag each invoice thumbnail to the appropriate destination folder.

All three of these packages are feature-laden and this review has scratched the surface. However, one great PaperPort feature is the ability to print a file from the Web directly to the PaperPort desktop. This is very slick and easy. Simply select FilePrint from your browser and select PaperPort from the Printer Name drop-down list and click [OK]. The other excellent feature is WebPublish. Simply drag a group of selected images, photos for example, to the Web-Publisher icon and its

HTML Web page will be created. In the browser you will see a nicely formatted page similar to a contact sheet that displays rows and columns of photos in thumbnail form.

Clicking on the thumbnail will load the full-size photo. This can be useful for preparing reports to be uploaded to an intranet, just add text and do a few simple edits to the generated file.

Archiving to CD-R or Zip media is handled well. A

freely distributed viewer makes it possible to view PaperPort files distributed within a company.

### Product: PageKeeper Standard 3.0

Maker: Core Corp. (<http://www.core.com>)

Price: \$329.99

Rating: B+

PageKeeper is similar to PaperPort except in one major respect: rather than copy the original image file PageKeeper keeps a pointer to the original. The interface is very similar; folder tree is on the left, the desktop with thumbnails is on the right. Double-click to expand-view and edit or minimize. The point-or system greatly reduces the amount of hard disk space required and maintains a link to its image that is comforting to be modified. One problem we had with this system was that as we modified our file structure or changed CDs the program would lose its ability to find the image the thumbnail was based on.

Like the other two packages reviewed here, PageKeeper allows "stacking" of documents. Stacking groups related documents into a multi-page document that can be read in sequence. File operations such as moving and exporting are simplified if related documents are stacked. In addition, a stack reduces clutter on the desktop.

### Product: PagePro 2.0

Maker: Kover Corp. (<http://www.kover.com>)

Price: \$329.99

Rating: B

PagePro stores image files in a very compressed XIF format. Pre-existing image files are dropped into the PagePro desktop and should be converted to .xif files. The system is highly integrated with the scanning process. We found the best results were achieved when all scanning was done with the PagePro interface driver.

The user interface is similar to Windows Explorer except we were unable to find a way of displaying a directory tree.

PagePro shines in the image-editing department. All the basic annotation tools are there as well as nice arrows and rubber stamps, like "Draft" and "Approved." A photo-fitting package headed with PagePro makes it excellent for maintaining graphic images.



Core PageKeeper's better directory-driven index filing may

## Finding Your Data

All three document management packages reviewed here support background OCR and thus, searching on content. But we were unable to test the advanced searching features of PageKeeper, as they are not included in the Standard version. PaperPort has an excellent search engine. An index of every word in the database is maintained in the background. We were able to locate the number sequence 74993 almost instantly. Clicking [Show Details] brought up and window where we could see that it was indeed the invoice we were looking for. On clicking the [Go To] button we were presented with the thumbnail of the invoice, and with a double-click our document was in full view. ☐

John Ryan is a reviewer of VisiOnix's Easyfile DataGraphics. He can be contacted at [jryan@bcu.com](mailto:jryan@bcu.com) or



**Encyclopedias  
and TV-Related  
Packages are  
Hot Sellers**

by James Burchell

# Now That's Edutainment!

Education is the number one reason that Canadians buy PCs. Entertainment's the next big draw, according to a 1997 study by AC Nielsen. So it's no wonder that edutainment (a useful combination of the two words and concepts) is an important software category.

More specifically, in AC Nielsen's "Canadian Home PC" and *Entertainment Weekly*, researchers found more than three-quarters of respondents used PCs primarily for games. The heaviest gamers are males aged 18 and older, followed closely by females of the same age group. But surprisingly, the next biggest game players are children between the ages of seven and 12.

Software developers such as *Broderbund*, *Knowledge Adventure*, and *The Learning Company* have coupled children's enjoyment of computer games with learning activities. *Mom and Dad* can rest assured that elementary school-age children will not only become increasingly adept at working the computer, they'll learn useful things while doing it.

And although older teens and young adults may not be quite as taken with computers as their older siblings, there are many edutainment products to encourage those as young as 12 months to spend time computing.

*Brookslope Canada Inc.*, a major distributor of home-oriented computer products, reports its bestselling edutainment software titles are encyclopedias. Software packages based on popular children's TV shows turned out children of less than 12 years of age are also good sellers.



## McClelland & Stewart Inc.

*The 1999 Canadian Encyclopedia World Edition (\$69.99)*

*The 1999 Canadian Encyclopedia Student Edition (\$34.99)*

McClelland & Stewart has extended a winning formula to grade school students with the 1999 Canadian Encyclopedia Student Edition in a multimedia format from the World Edition into something more manageable for the late-elementary and junior-high age groups.

Compared to the World Edition, the Student Edition is pared down. It offers three types of content: Canadian articles, *Globe* definitions and multimedia items. In contrast, the World Edition presents Maclean's articles, Canadian and *Columbia Encyclopedia* articles, Internet links and updates, plus multimedia items.

Content is simplified when compared to the parent publication. For instance, a quick search on the subject of pollution yields information on land, air and water pollution as well as pollution controls. In comparison, the World Edition turns up much more detailed data covering the types of pollutants, air-source management, and air-pollution pathways.

The Student Edition still offers a hefty amount of text to wade through. However, And although not as sophisticated in vocabulary use as the World Edition, students below Grade Six level will need assistance deciphering some of the written content.

In addition to providing Canadian material, this title includes the Fifth Edition of the *Columbia Encyclopedia*, a French/English and English/French dictionary, the *Globe Canadian Dictionary*, *Rogers' Thesaurus*, and *Maclean's Year in Review*.

## Microsoft

*Encarta Reference Suite 99*

*(\$4.99 99, with a \$45 sticker rebate)*

Encarta Encyclopedia Deluxe 99 is bundled with Encarta Virtual Globe 99 and Microsoft Bookshelf 99, to create the five CD-ROM reference library with the Encarta Reference Suite 99. Content ranges from 360-degree photographs and animated illustrations to new articles, literary excerpts and reproductions of historical documents.

Encyclopedia Deluxe 99, the main package in the suite, offers a new Web-style interface allowing users to select a topic and navigate among elements ranging from articles to illustrations, and videos. To ease the search process, Encarta uses natural-language query technology. This allows the user to just type in questions such as "What's the biggest ocean in the world?"

With more than 40,000 articles and thousands of multimedia elements, Encyclopedia Deluxe 99 also offers command and control and text-to-speech technology, which lets the user navigate through the encyclopedia using spoken commands and hear text read aloud by a synthesized voice.

It also includes more than 2,000 original documents (from such notables as Albert Einstein), which provide first-hand accounts of historic events and perspectives on complex issues. Users can also access more than 16,000 videos, pictures, illustrations, video clips and in-

teractive, as well as links to 35,000 peer-reviewed Internet sites.

Encarta Virtual Globe 99 offers a comprehensive collection of worldwide maps in 18 different customizable map styles ranging from topography, temperature or population, to eco-regions and political regions.

With more than 600,000 entries, Microsoft Bookshelf 99 provides nine bestselling reference works ranging from *Rogers' Thesaurus* and the *Columbia Dictionary of Quotations* to *The American Heritage Dictionary*, Third Edition and *The Microsoft Press Computer and Internet Dictionary*.

## Knowledge Adventure

*Play With The Teletubbies (\$19.99)*

This interactive game is based on the popular Teletubbies television show created for the BBC in 1997. It was the first TV show created for children as young as 12 months. The show became a phenomenon in England and reached the U.S. and Canada this year.

The Teletubbies are four technological characters that look like chubby baby dolls in felt suits. They live in Tellytubbyland, a place of rolling hills, small friendly animals and talking flowers. They reside in a Tellytubby Superdome that looks like a spaceship and their tummy

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light up to three pages and names of children in the real world. Play With the Teletubbies features seven activities including 11 video segments, 11 nursery rhymes and two "musical" interludes.

The manufacturer says the product is designed to enhance imagination and creativity, stimulate spatial awareness, encourage pattern recognition and reasoning skills.

The package features a cursor reader of "pink spittle" that comes out of the landmark Tolerably windmill. Many of the operations can be activated by positioning the cursor on an icon, rather than having to click, which is difficult or impossible for a young mouse child.

The activities include Chase the Nono-ono, a well-meaning vacuum cleaner that has stolen the Tokidokidoki's slippers. Tobby team. The child helps chase the Nono-ono and in the end gives it a big hug. Children will discover that moving the mouse quickly in a scrubbing action will assist in the movement and make the Tokidokidoki walk faster.

In the Hiding Game feature, the child helps a Teletubby find those that are hiding so they can all come on a big bus.

Whether he used "soft" or "hard" law

A subsidiary of The Learning Company

The Greater Access Activity Challenge (GAAAC)

© 2004 Blackwell Publishing Ltd *Journal of Internal Medicine* 255: 105–112

[illegible]

Based on the Emmy-award winning American TV program, the Ragdolls are ready to amuse and educate kids aged six to 12 with adventures, brain games and strict respect.

A precursor to an upcoming motion picture release — *The Rugrats Movie* — *The Rugrats Movie* Academy Challenge features board-wrestler games and introduces baby Dil, the newest member of the Pickles family. Dil joins the cast of siblings including Tommy, the one-year-old infant leader; Chelsea, his rebellious, scatable sibling; Angelica, Tommy's older, bull-dog cousin; and two cool Phil and Lil.

Whenever adults are around, the Ragnats act like the babies they are, but when they're alone they talk to each other with the vocabulary five-year-olds use. The Ragnats Movie Activity Challenge features six engaging games based on the novel of *Din*. Kids build problem-solving, creative and critical-thinking skills while moving through 180 levels of games such as speeding through traffic in the Raptor Wagon, steering the Agor Raptor through rising rapids, and finding out escaped monkeys. The Ragnats Adventure has kids gain a 3D battle for the world. The films and their cool games are meant to take over the earth and it's up to the kids to stop them by solving more than 70 puzzles, riddles and riddles.

Ragnas First Shop kits help create art projects featuring the Ragnas gang. Choosing from more than 20 projects, 200 ready-made designs and 600 different Ragnas graphics, kids can create banners, holiday kits, calendars, stationery, signs and posters, stickers and so much more.

### Creative Winners

**Journal of Management Education** 35(10)br/>October 2011

Time's Art Workshop provides hundreds of ways for children five and up to create artwork and imaginative projects. They can paint portraits and add Imagined Square Street characters as well as create birthday cards, flower bouquets, masks and posters.

Downsized buttons and helpful creative hints from Eligo ensure that every effort leads to a masterpiece. The manufacturer says the product helps develop creative expression, while familiarizing the child with shapes, and colors, drawing and pointing, letters and numbers as well as the keyboard and mouse. It also comes with a printing card reader and screen-wave control for Windows only.

## Creative Wonders

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**Modeling in R: A Practical Approach** (2018, 400)

in *Mathletics's Thinking Games*, children join *Mathletics*, star of the animated TV show, in exploring her schoolhouse full of fun and challenging learning activities. Children build thinking and problem solving skills in each room as they solve more than 30 puzzles and play 11 activities with three levels of difficulty.

The product is intended to promote critical thinking, reasoning and problem solving while improving memory, spelling, pattern recognition and creativity. It includes five full-length Mindbender music videos, and printable award certificates.

**Busy Day.** *Adventures* takes children into Madison's studio where they paint, play the piano and sing along with movies. The rest of the program also available, as much more is a new addition.

A multi-syllable game like *chakravala* matches the Finnish or Spanish word with the corresponding English word. Watercolor-like tools, pastels and a water brush are used to paint the scenes.

Children can solve more than 30 puzzles of pictures of Madeline and friends and can also dress up the characters. There are 40 activities that can be printed out and done away from the computer.

As retailers gear up for the Christmas season, these products combine the key elements of learning and fun. Meanwhile, the relatively low prices make them reasonable stocking stuffers, too.

*James Stuchlik is interim editor of Toronto's **Compusero!** and is based in Toronto. He can be reached at [jstuchlik@compusero.com](mailto:jstuchlik@compusero.com).*

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Feature

# Voice Over IP: TALK About the Potential!

by Paul Liss

Look who's talking. People on the Internet, that's who.

And people in business will soon be talking across networks too. VARs had better start talking to IP-network manufacturers if they want to get their foot in the door of this potentially massive market.

Some background: to send e-mail zipping around the world, or to view Web sites on host computers located anywhere telephone lines travel, the vast majority of Internet users simply make a local call to their ISP and log on to the Internet. Since the Internet can transmit multimedia data, text, images, animation, sounds and voice — it didn't take long for enterprising companies to develop software to let two people anywhere on the Internet talk to each other.

Do you want to talk through your computer in Toronto to your sister in California? As long as you both have an ISP, log on to the 'Net at the same time and have the same Internet 'telephony' software on your machines (PC sound card, microphone, speakers required), you can talk to each other without incurring long-distance charges.

If you paid a flat fee for unlimited Internet access, you could, in theory, talk forever and not pay one cent more.

The first Internet telephony calls were half-duplex (users had to take turns talking as if they were using walkie-talkies), but now full-duplex software on the market allows for near-normal phone-like conversations to take place over the 'Net.

However, the quality of calls can leave something to be desired, especially in peak periods when the 'Net is sluggish. The user

can also get booted off-line unexpectedly, by some quirk of the Internet or an ISP hiccup.

But a little on-line shyness and the somewhat unstable nature of the Internet has not prevented traditional computer companies from getting into the Internet telephony act.

Microsoft Corp. is incorporating its NetMeeting software into its Web browser, Internet Explorer. NetMeeting lets users place telephone calls while on-line, conduct video conferences using the Internet or corporate intranets and collaborate on wordprocessing and spreadsheet documents.

IBM Corp. has cut a deal with IDT Corp. that allows IBM to promote IDT's NetPhone Internet phone service by including the software in its Internet access kit. The two companies will share the revenue generated.

## Impact of VOIP

What impact will voice over Internet protocol (VOIP) have on traditional telephone long-distance service providers?

Last year, the *Wall Street Journal* reported that U.S. long-distance carriers could see revenues drop by US\$620 million to US\$925 million. AT&T Corp. alone could lose up to US\$350 million in annual revenues by the year 2001.

The research organization, Kilen & Associates, estimates 35 per cent of all phone calls will be made using Internet protocol (IP) networks by 2002, a potential \$60-billion market. And a report by the British consulting firm, Analysts, claims all Internet-based phone services combined are poised to overtake conventional (switched network) phone

traffic by the year 2000.

We're not just talking about computer-to-computer VOIP. Toronto-based, Qwest Communications International Inc. is using Internet technology to offer long-distance calls any time of day or night for 7.5 U.S. cents per minute. The service should be rolled out to 125 cities by the end of the year.

IDT is working on phone-to-phone long-distance service called Net2Phone Direct, a system that uses the Internet backbone instead of the phone company network to deliver calls. Subscribers would use their normal phone to make long-distance calls and pay a flat rate to IDT for Internet access.

PC World recently reviewed two products that enable users to make calls over the Internet without using a computer or long-distance service provider: ApolloPhone from Apollo Inc. and InfoTalk IT 1000 from InfoMedia Inc. Each one costs less than US\$200 and contains everything a user needs for Internet telephony, including a built-in modem.

Both the caller and the called party need the same Internet phone system as well as a traditional phone. The caller makes a normal long-distance call using the traditional phone and, when the call is answered, the Internet phones then find and identify each other via a local ISP connection. The two parties can then hang up the telephone and complete their conversation on-line.

## Corporate Talking

As VOIP matures, it will have a major impact on the business world.

Employees with access to voice and



## Call Centres Get New Voice

by Paul Little

**IBM**, New Brunswick's parent of tripartite telecommunications company, is working with Toronto-based Bellsoft Technologies to develop products that allow call centres to serve callers over the Internet — by voice.

Under the agreement, the two companies will integrate an Internet customer service solution, based on Bellsoft's LiveContact software, into call centres so that customers and vendors can communicate by text or voice over the Internet.

It will also enable call centre operators to push information — such as electronic brochures, photographs, price lists — across the Internet, upon request, to Web site visitors. Although the project is in the pilot stage, the companies announced plans to offer it as New Brunswick's call centre by the end of 1998, and to other call centre providers next year.

"We're evolving the traditional call centre into a multimedia contact centre," said Jack Davis, vice-president of IBM's tripartite call centres, one of by companies representing 90 per cent of the commercial/financial sectors.

The need for the product can be attributed to the growth of the Internet and electronic commerce, according to Mark Shapero, CEO of Bellsoft Technologies. While companies find they don't need sales people to sell products such as books and CDs online, they have found they need sales staff "to use the Internet for more complex transactions and to build customer loyalty," says Shapero. He claims LiveContact is "bridging the phone industry with the PC industry." Bellsoft is also in the market for clients to create and monitor solutions for LiveContact.

Although IBM and Bellsoft Technologies are bullish about their partnership, they face stiff competition in this area. NetTel's Symposium, part of its call centre portfolio, includes Internet, fax and e-mail access as well as a Web chat facility that lets online consumers chat with call-centre staff by text or voice.

And in June, IBM announced new customer-service-oriented solutions that include CallPath buttons to establish voice links between Web site visitors and call centre customer service representatives.

data-enabled IP, ATM and Frame Relay networks will be able to send and receive internet e-mail, share data, send and receive faxes, make phone calls and access the Internet — all from their computers.

If teachers think on-line conversation is just a corporate fantasy, they should think again. A recent survey of 32 major Canadian corporations by Calgary-based MarketPanel concluded that 63 per cent of large Canadian companies are in the midst of evaluating voice-over data networks, 18 per cent are preparing pilot projects or have started them. Only 10 per cent of the companies surveyed see no application for VOP.

The potential for the exponential growth of VOP is one of the reasons Northern Telecom (Nortel), one of the world's largest providers of public and private telecommunications and data solutions, announced plans to invest more than US\$13 billion in stock in Bay Networks Inc., a company that manufactures and distributes networking products for corporate organisations. This could be seen the largest merger of voice and data networking companies on record.

Companies and consumers are pushing for reliable networks that make optimal use of IP technology, says Marc Pearce, Bay's executive vice-president in charge of Internet/telecom. "We think we're creating a US\$30 billion market within three years that didn't exist before."

Cisco Systems Inc. and 3Com Corp. have developed voice and data integration strategies resulted in multi-service networks that could voice and data traffic. Of course Microsoft, IBM, Novell and other companies

are pursuing VOP strategies.

The Array IP-Telephony Gateway (ATIG), from Array Telecom in North York, Ont., was recently selected for a CTV (Corporate Telephony Integration) Magazine editor's choice award designed to recognize the best new telecommunications products.

Array Telecom provides communications solutions for users including ISPs, carriers, alternate service providers, and corporations with call centres, help desks or geographically dispersed offices and markets. Its ATIG product is described as a suite of software products that provides voice and fax communications over any IP network, including the Internet and corporate networks.

## Hurdles to Leap

Of course there are obstacles in the way of VOP.

Currently, the reliability standard for voice networks is "99.999 percent reliability" or 99,999 percent reliable. However, private data networks are only about 94 percent reliable, carrier data networks are about 91 percent reliable and the public Internet is about 65 percent reliable.

Not until the reliability of a data packet equals the reliability of a land line will real convergence make sense, say analysts. Still, if you want new technologies to converge, new markets for your business, and new revenue streams in which to fish, then start talking about VOP. ■

*Paul Little is a Toronto-based journalist who specializes in high-technology reporting. He can be reached at paul@paulnet.com.*

# VISUAL BASIC,

## for Proficient Beginners

by Stephen Barak



<b>Title:</b>	<i>SAMS Teach Yourself MORE Visual Basic 6 in 21 Days</i>
<b>Author:</b>	Lewis Miller
<b>Publisher:</b>	SAMS (Macmillan Computer Publishing)
<b>Web-site:</b>	<a href="http://www.computingbooks.com">http://www.computingbooks.com</a>
<b>Cost:</b>	\$42.95
<b>Description:</b>	A beginner's guide for those who are familiar with VB fundamentals. The focus is on application development including database and Web-based work.
<b>Rating:</b>	A-

The field of Visual Basic programming is too large to be encompassed in any one book. But for those who already have a casual knowledge of Visual Basic, "SAMS Teach Yourself MORE Visual Basic 6 in 21 Days" is meant as a starting point on a journey that continues as a series of books.

The back cover suggests a "user level of beginning to intermediate." However, if you are new to programming, you should already be familiar with VB object properties, events, methods, forms, modules, basic objects and simple program development. If you are an experienced programmer then you can go directly to this book after surveying the tutorial information packaged with Microsoft's VB software.

Unlike other "21 day" books this immediately focuses on application development — combining several programs into a cohesive unit producing an application. This gives the book a unique practical value lacking in others. For example, the first module goes into the project life cycle: Design, Coding, Testing and Debugging, and Documentation. Being broken down further into its own life cycle emphasizes the design phase: design descriptions, functional definitions, technical definitions, pseudo-code and form layouts.

All the components that make up an application from user interface, local/network database access, on-line help including HTML-based help, reporting including Crystal Reports, Internet access, graphics testing and scripting to application packaging and distribution are covered. This application focus is this book's strength over the scores of introductory Visual Basic books.

Microsoft's Visual Basic 6 software package is much stronger in database access, control flowability and Internet integration than previous versions. These areas are amply explored in this book.

The coverage includes many additional topics from those covered earlier in this review. Here are a few of them:

- Common Dialog,
- Using templates,
- Class creation, object creation, collections, array processing,
- Visual Data Managers,
- Data Form Wizard,
- Data Environmental Designer,
- Data Report Designer,
- Crystal Reports,
- OLE drag and drop, system tray control, data controls,
- Error handling,
- Building on-line help, HTML, Help Workshop,
- Testing and debugging, breakpoints, watch expressions, conditional compiling,
- Increasing performance, using Lightweight Controls, optimizing code, compiling versus P-code, using the Resource Compiler and Editor
- Creating an ActiveX Document, using the Hyperlink object, using the ActiveX Document Migration Wizard,
- Using Microsoft Agent to employ animated characters as interactive assistants to introduce, guide and entertain,
- And using the Visual Components Manager, Visual Code Profiler, Image Editor, Visual SourceSafe.

SAMS Teach Yourself MORE Visual Basic 6 in 21 Days should be recommended, due to its emphasis on applications. There is good coverage of many advanced controls and the features unique to Visual Basic 6. B+

Stephen Barak is a lecturer, researcher and technical coordinator at Capleton College, and can be reached at [sbarak@capleton.bc.ca](mailto:sbarak@capleton.bc.ca). The college and its faculty have ACE, CAPCE, CPEP, Microsoft Novell, IBM and Intel partnerships, accreditations and certification.

### Scenario

You're designing a new application and you need some advice to consider for the user interface, place to store, the interface in the application. In addition, you need tips on building complex forms of screens.

### Solution:

In Day Three of the book, you examine and code the three main interface types.

**Single Document Interface or SDI** This is the simplest interface consisting of a single data window that users work at. A good example is the Paint application.

**Multiple Document Interface or MDI** An MDI application has a Windows menu, which allows users to create multiple windows and easily switch between them. A good example is Microsoft Word.

**Explorer Interface (EI)** An EI application has a single window divided into a tree style view on the left and a display area on the right. A good example is Windows Explorer.

In Day Seven, there is extensive coverage of what goes into good form design including performance and usage tips. These topics are rare in standard VB books. A simple tip — use 448 by 440 resolution when designing forms and stick to the standard colors.

### Scenario

You are charged with enhancing an existing database system. You have redundant data in your database. What methods can you use to reduce repetitive data? You want to simplify your coding of database access, where previously you used DAO for local access to data and RDO for remote access. In addition, you want to investigate adding Internet access to your applications.

### Solution:

In Week Ten, you learn all about databases and Microsoft's Universal Data Access (UDA) strategy — allowing for any database to be accessed the same way. Normalization is covered, which is the formal process used to reduce data redundancy. In Day Nine, you venture into SQL as its use is queried. In Day 10 you use Access Data Objects (ADO) to access both local and remote databases without the need to change between DAO and RDO. In Day 14, you add Internet browsing and the related capabilities to your application. Plus, you'll leverage your VB programming skills in using VBScript and see the effect of Dynamic HTML on Internet Web applications.

Life used to be so simple.

Motherboards, for example, were once a one-size-fits-all sort of thing. Intel's Socket 7 design could accommodate Pentium processors, the MMX successor, and clones from AMD, Cyrix and others. PCI slots were for high-end controllers, and ISA slots were for everything else. Sound cards were either made by Creative Labs or aimed for compatibility with that company's Sound Blaster standard.

As a result, with a little time-and-spatching, it was easy to make a PC. Slip a broad name on the front and go into business.

It seems it was just too easy.

Then, Intel migrated its product line over to a new, incompatible design—Slot 1. Pentium III and low-end Celerons from the company used motherboards with that design, while the competition's products continued to work with Socket 7 designs.

AMD has announced its next generation KT CPUs will (like Pentium III), be designed on a cartridge, and will fit in a slot that will be "mechanically identical" to Slot 1.

Nicely put. Mechanically identical means the slot will look just like Intel's version. But AMD's socket isn't electronically compatible! AMD CPUs will fit in Intel sockets and vice versa—they just won't work. This is bound to confuse users, and require that motherboard manufacturers design and stock yet another line of incompatible boards.

Not to be left out, Intel has switched strategies for the low-cost Celeron line yet again. Initially, Celeron CPUs were compatible with Pentium II-style Slot 1 designs—an Intel strategy to wean the market from the older Socket 7 designs favored by the clones.

Recently, however, Intel announced a new line of socketed Celeron models, a design change made possible by the integration of the Level 2 cache in the latest generation of Celerons. But while the 370-pin socket resembles the classic Socket 7 design, it also won't be compatible.

Initially, Intel will continue to sell the single edge processor Slot 1 Celerons alongside the plastic pin grid array (PGA) socketed model, but it will be phasing out sales of the Slot 1 model. This will force motherboard manufacturers to support yet another product line, and make it more difficult for consumers to upgrade a Celeron to a higher-end Pentium III.

Processor and motherboard designs aren't the only place where standards are fragmenting. Do you want a PCI or AGP graphics card? And is that AGP or AGP2?

Just as flat-panel display prices are approaching the point where they might become an option, we start to get analog models that will work with a standard video adapter, and not one, but two competing standards for digital connections. (The digital models require clarity by eliminating the digital-to-analog-to-digital conversions otherwise required—but at the cost of only working with a limited range of video adapters.)

And vendors and manufacturers have to try and make their way

through a mine of competing and incompatible 3D models (generally of interest to game players). This could become less of an issue as more and more games are designed with Microsoft's Direct 3D in mind. By writing for Direct 3D (a part of the DirectX group of programming environments), developers do not have to write code for 3D adapters they wish to support. As long as the adapter has a DirectX 3D driver, any DirectX 3D game or program will be playable.

Similarly, as game developers finally abandon DCCS, old-style Sound Blaster compatibility has become less and less important. As a result, the new generation of audio adapters have finally been able to move away from the old ISA bus. New products are all using PCI, resulting in lower hardware configuration nightmares.

At the same time, we see again using several competing standards, particularly with Creative Labs Sound Blaster Live models opposing a variety of products featuring Aureal's A3D drivers (Aureal's recent A3D 2.0 specification and Yortex 2 sound processor up the ante, while Creative is offering its new EAX drivers for all its PCI models).

As with the 3D video war, much of this conflict will be invisible to end-users as long as they stick to running DirectX 3 games.

But you can bet that the manufacturers will be heavily promoting their competing products. And many game developers will still be stuck in the middle, producing products that only run on some, but not all hardware. Then again, if the USB products finally take off, USB speakers may make sound cards of any sort obsolete — at least for much of the mass market. The hard-core gamers will, I predict, prefer the four or five speaker 3D sound that they can only get with one of the new generations of PCI sound cards.

Of course, USB products have not yet fulfilled their promise. Connect up to 127 devices? Not a chance. Not swap peripherals? Maybe. A couple of devices chained together may work. But then again, they may not. Expect better success with Windows 98 than with Windows 95B with USB extensions, but even with Windows 98, problems reportedly continue.

Of course, each of these operating systems supports a different set of hardware standards. Ironically, the Macintosh has increasingly supported the majority of PC standards—adopting the PCI bus, IDE drives and USB (with the caveat).

Eventually, we may see some stability once again, as sound and 3D video and other standards emerge victorious. Then again, this fragmentation may continue for quite a while, as unique markets continue to solidify for low-end PCs, mid-range home machines and business offerings.

Manufacturers, distributors, vendors and customers (in any order) of tech support staff may wish nostalgia for the mid-1990s, when it seemed one size fit all. ☐

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# NEW PRODUCTS

## Compaq's DVD Notebook is Aimed at Consumers

Aimed at what the company calls is a "consumer" market, Compaq Canada Inc. has launched the Presario 1810 notebook PC, featuring an integral DVD drive.

The Presario 1810 is based on a Pentium III 500MHz processor, with 64MB RAM, a 6.4GB drive, a large optical screen, 56Kbps modem and USB connector. Suggested list price is \$5,150.

The introduction of a high-end consumer DVD notebook such as the Presario 1810 is a sign that Compaq needs to fight for leadership of an emerging premium consumer notebook market, a space at which Hewlett-Packard, Samsung, Sony and Dell are also vying.

See <http://www.compaq.ca>



## Targus Makes Mini-Book Cases

While the sudden proliferation of pocket-sized computing devices such as the 3Com Pilot line and the Microsoft Windows CE devices, there is also an epidemic of carrying protectors and carrying (and even, as handheld users try to find some elegant and safe way of transporting their tiny gadgets).

Targus, a maker of carrying cases for mobile computers, has responded to the need with a line of sleek new carrying cases for PDAs, handheld PCs and mini-notebooks. The new line of cases ranges from a simple, lightly padded silicone for a Palm Pilot-sized device, to finished leather protectors for Toshiba Libretto.

The new cases make for a somewhat bulkier load, but are designed to both organize and protect a handheld PC user's software, including business cards, travel documents and more. See <http://www.targus.com>



## Hewlett-Packard Re-Introduces Premium LaserJet

Hewlett-Packard Co. has completed its most extensive re-set of printer, copier, scanner and digital camera product businesses, with a total of 30 major new products.

For example, HP has added a multifunction device — the 900 dpi, 4-page HP LaserJet 1180, as well as a monochrome personal laser, the LaserJet 1180. Two new color laser printers — the HP Color LaserJet 4500 and HP Color LaserJet 4600 Compulink, was aimed at the corporate networked printer market, intended for people needing photographic image quality.

The new HP LaserJet A160 printer is a high-speed, high-volume business laser. The HP 2500C and HP 2500CM color ink-jets are intended for small networked offices that need fast, affordable color printing.

The Digital Sender is something entirely different. It's a scanning-imaging product that's aimed at allowing push-button capture and transmission of documents, to both paper and e-mail in a matter of seconds.

## IBM Ships 17-Inch Flat Panels

IBM — IBM Corp. has announced two 17.1-inch flat-panel monitors that improve on the firm's existing 16.1-inch models and will for less than half the cost of the 16.1-inch model, cost of its introduction a year ago.

The new digital FPM (7760) was scheduled to ship the month of an estimated street price of US\$1,649. An analog version (7764) will ship only next year for US\$1,399 (the company said).

By contrast, the 16.1-inch 8506 dropped from more than US\$2,000 about a year ago to a recent price of US\$1,649 as IBM wound down production. That's a drop of about 30 percent in a year.



IBM predicts the new flat-panel monitors will be popular with customers who use high-end graphics, computer-aided design, engineering, scientific and medical applications, financial manufacturing and call-center markets.

The digital model (7760) uses the new Video Electronics Standards Association (VESA) standard Plug and Display digital output interface. By encoding conversion to analog signal and back to digital, it offers a slayer margin of a lower cost.

See <http://www.ibm.com/jp/ibm/pc/consumer>



## Big, Big Fujitsu Flatlers

Fujitsu Canada is shipping high-capacity hard drives based on a storage capacity of 3,688 per platter. (Hard drives may contain as little as a single platter, especially in notebook PCs where drive height has to be minimized, but more commonly, desktop PCs allow contain several platters.)

In the case of the new Fujitsu drives, the Prodrive 12 and Prodrive 13H offer up to 18,368 capacity in a high-speed, low-cost platter design. The Prodrive 12 drives are 3,688 rpm drives, available in six models, while the Prodrive 13H drives rotate at 1,200 rpm, giving higher performance for power users. Prices range from \$150 to \$220, depending on model capacity and speed.

See <http://www.fujitsu.ca>



## Toshiba Launches Satellite

Toshiba of Canada Information Systems Group (ISC), has released the Satellite 4000CDS, based on the Intel Mobile Pentium III 386MHz processor. The notebook comes standard with a 6,666 hard drive, a 13.3-inch active-matrix screen, a Toshiba 2800-speed modem, 32MB of RAM, and an internal 24X CD-ROM drive. The total system weight is 6.8 pounds. The Satellite 4000CDS has a suggested list price of \$4,699.

Toshiba has announced an across-the-board price cut on the rest of the Satellite line, averaging seven percent price reductions. For example the Satellite 4000CDS dropped from \$5,179 to \$2,169 and the Satellite 4000CDS went from \$5,179 to \$2,169.

See <http://www.toshiba.ca>

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## Novell Canada names Education Manager

Novell Canada Ltd. has appointed John Gilling to the position of education manager.

He will work closely with the Novell Authorized Education Centers and Novell Education Academic Partners to provide Novell certification, education and training activities.

Gilling has 10 years of international business experience in Canada and Australia. Before joining Novell Canada, Gilling held the position of regional operations manager at IBM, Symantec and Learning Technologies.



John Gilling

## Compaq Canada Corp. announces New Positions

Reformed Hill, Ont.-based Compaq Canada Inc. has named Bill Harris as company manager, PC product marketing.

The company says he will be responsible for the strategic management of Compaq's commercial desktop and portable, personal digital assistant and option products categories. He will also develop and implement product-based marketing plans. He has responsibility for business planning, and enhancing market share, inventory, profitability and customer satisfaction level targets.



Bill Harris



Doug Gaudet

Oliver, Ontario has been named company manager, enterprise systems and storage.

His responsibilities cover Compaq's enterprise computing solutions, including fault-tolerant, business-critical systems, Alpha servers and workstations, networking and storage products.

David Corfield takes the position of product manager, Intel and Alpha workstations. He is responsible for product management for Intel and Alpha-based workstations, including product launches, pricing, promotions and forecasting.

## HP Adds Quebec Managers

Hewlett-Packard (Canada) Ltd. has appointed two general managers for its Quebec operations. André Loringier and Mario Vialle will jointly manage HP Canada's business operations, which include HP's Support Response Center, the Express Help Desk, and sales and service offices in Montreal and Quebec City.

In addition to their new roles, Loringier and Vialle will



André Loringier



Mario Vialle

retain their existing sales management responsibilities within HP's computer organization. Specifically, Loringier will manage HP's Eastern Canada team, and Vialle will manage the HP team that provides business solutions to water enterprises in Quebec. HP

# Calendar

**Dec. 9-10**  
Knowledge Management Conference & Expo  
Toronto  
<http://www.dmi.com/>

**Jan. 11-15**  
Canada/Canada West  
Vancouver  
<http://www.canada.com/>

**March 20-21**  
Electronic Commerce  
Conference & Expo Series  
Integrating Electronic Commerce Strategies  
into Your Business Systems  
Toronto  
<http://www.info-program.com>  
Call (416) 333-1550

**Dec. 1-3**  
Implementing the e-Enterprise: Internet, Intranet and e-Commerce  
Procedures  
<http://www.ict.org.sg/>

**Dec. 3-4**  
Understanding Enterprise Architecture  
Edmonton  
<http://www.cdnw.ca/edmonton.html>

*Do you have an upcoming event you'd like to see listed in CCM's Calendar? E-mail: [ccw@ccm.ca](mailto:ccw@ccm.ca)*

## Reader Poll

### Finis 1998!

As we approach year end, Canadian Computer Weekends would like to get the opinion of our readers about the overall health of the industry.

### Our Question to You:

As a channel player, how does your own company's 1998 financial situation compare with the previous year?

- ☐ Our financial picture is about the same as in 1997
- ☐ There's been substantial improvement.
- ☐ There's been some improvement
- ☐ Our financial situation is somewhat worse
- ☐ Our financial situation is substantially worse.

Overall, is the Canadian computing channel in general, which most closely and closely your view when comparing the financial situation of 1998 to 1997?

- ☐ The financial health of the industry in 1998 was similar to 1997.
- ☐ There was considerable financial improvement in 1998 over 1997

- ☐ There was some financial improvement in 1998 over 1997
- ☐ The industry was somewhat less financially healthy in 1998, compared to 1997
- ☐ The industry was considerably less financially healthy in 1998, compared to 1997

### Last issue, we asked:

Lacking awards (USA), how enthusiastic will your customers be about purchasing USB drives?

### You said:

- 70%** In 1998, USB devices will slowly pick up popularity
- 20%** In 1998, USB devices will explode onto the market-place
- 10%** The industry exited to chance with USB, the technology isn't significant.

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